

## WHAT IS CLAIMED IS:

1. An ink jet printing apparatus comprising print medium conveying means for conveying a print medium, scanning means for moving a print head that ejects ink droplets, along a main scanning direction crossing a direction in which the print medium is conveyed, and printing control means for controlling an operation performed by the print head to eject droplets,

wherein said printing control means comprises:

first printing control means for allowing formation of test patterns used to adjust landing positions of ink droplets in the main scanning direction, the ink droplet ejected by the print head onto the print medium; and

second printing control means for controlling the operation performed by said print head to eject ink droplets in the main scanning direction on the basis of landing position adjustment values for the ink droplets determined on the basis of said test patterns, and

wherein on the basis of a plurality of landing position adjustment values set in association with a plurality of areas in the conveying direction of the print medium, said second printing control means controls the operation of ejecting ink droplets in each area.

2. An ink jet printing apparatus comprising print medium conveying means for conveying a print medium, scanning means

for moving a print head that ejects ink droplets, along a main scanning direction crossing a direction in which the print medium is conveyed, and printing control means for controlling an operation performed by the print head to eject droplets,

wherein said print medium conveying means has at least a pair of rollers located upstream of an area printed by said print head,

wherein said printing control means comprises:

first printing control means for allowing formation of test patterns used to adjust landing positions of ink droplets in the main scanning direction, the ink droplet ejected by the print head onto the print medium; and

second printing control means for controlling the operation performed by said print head to eject ink droplets in the main scanning direction on the basis of landing position adjustment values for the ink droplets determined on the basis of said test patterns, and

wherein before a trailing edge of the print medium passes through said conveying means, said second printing control means performs an ink ejecting operation on the basis of a first landing position adjustment value, and after a trailing edge of the print medium passes through said conveying means, a second landing position adjustment value different from said first landing position adjustment value.

3. An ink jet printing apparatus comprising print medium conveying means for conveying a print medium, scanning means for moving a print head that ejects ink droplets, along a main scanning direction crossing a direction in which the print medium is conveyed, and printing control means for controlling an operation performed by the print head to eject droplets,

wherein said print medium conveying means has at least a pair of rollers located upstream of an printing area by said print head,

wherein said printing control means comprises:

first printing control means for allowing formation of test patterns used to adjust landing positions of ink droplets in the main scanning direction, the ink droplet ejected by the print head onto the print medium; and

second printing control means for controlling the operation performed by said print head to eject ink droplets in the main scanning direction on the basis of landing position adjustment values for the ink droplets determined on the basis of said test patterns,

wherein said first printing control means allows to form a first test pattern before a trailing edge of the print medium passes through said print medium conveying means, and allows to form a second test pattern after the trailing edge of said print medium has passed through said pair of rollers, and

wherein before the trailing edge of the print medium

passes through said print medium conveying means, said second printing control means performs an ink ejecting operation on the basis of a first landing position adjustment value determined from said first test pattern, and after the trailing edge of said print medium has passed through said pair of rollers, said second printing control means performs an ink ejecting operation on the basis of a second landing position adjustment value determined from said second test pattern.

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4. An ink jet printing apparatus according to claim 2 or 3, wherein the second landing position adjustment value varies depending on the type of the print medium.

15 5. An ink jet printing apparatus comprising print medium conveying means for conveying a print medium, scanning means for moving a print head that ejects ink droplets, along a main scanning direction crossing a direction in which the print medium is conveyed, and printing control means  
20 for controlling an operation performed by the print head to eject droplets,

wherein said printing control means comprises:

detecting means for detecting a distance between said print element arranged surface of said print head and a  
25 surface of the print medium; and

acquiring means for acquiring landing position adjustment values used to adjust landing positions of ink

droplets in the main scanning direction for each scan of said print head in accordance with said distance detected by said detecting means, the ink droplets being ejected from said print head onto the print medium, and

5        wherein an operation performed by said print head to eject ink droplets in the main scanning direction is controlled on the basis of the landing position adjustment values acquired by said acquiring means.

10    6. An ink jet printing apparatus comprising print medium conveying means for conveying a print medium, scanning means for moving a print head that ejects ink droplets, along a main scanning direction crossing a direction in which the print medium is conveyed, and printing control means  
15    for controlling an operation performed by the print head to eject droplets,

      wherein said printing control means comprises:

      acquiring means for acquiring landing position adjustment values used to adjust landing positions of ink  
20    droplets in the main scanning direction for each scan of said print head in accordance with printing density in the conveying direction of said print medium, the ink droplets being ejected from said print head onto the print medium, and

25        wherein an operation performed by said print head to eject ink droplets in the main scanning direction is controlled on the basis of the landing position adjustment

values acquired by said acquiring means.

7. A printing control method for an ink jet printing apparatus comprising print medium conveying means for  
5 conveying a print medium and scanning means for moving a print head that ejects ink droplets, along a main scanning direction crossing a direction in which the print medium is conveyed, the method comprising:

10 a first step of causing test patterns to be formed, the test patterns being used to adjust landing positions of ink droplets in the main scanning direction, the ink droplets being ejected from said print head onto the print medium; and

15 a second step of controlling an operation performed by said print head to eject ink droplets in the main scanning direction, on the basis of landing position adjustment values determined on the basis of said test patterns, and

20 wherein in said second step, on the basis of a plurality of landing position adjustment values set corresponding to a plurality of areas in the conveying direction of said print medium, an operation of ejecting ink droplets in each of said areas is controlled.

8. An ink jet printing apparatus comprising conveying means  
25 for conveying printing medium along a conveying direction, scanning means for reciprocally moving a print head that ejects ink droplets along a main direction crossing the

conveying direction, printing control means for controlling an operation performed by the print head to eject droplets while the printing head is reciprocally moved by said scanning means, said apparatus comprising:

5 registration means for adjusting an ink ejecting timing from printing head in forward scanning and backward scanning according to an adjusting value,

control means for controlling said registration means so as to adjust the ink ejecting timing using the adjustment  
10 value corresponding to the position of the printing medium conveyed by the conveying means in the conveying direction;

wherein said control means controls said registration means so that the adjustment value is used to adjust the ink ejecting timing out of a plurality of adjustment values  
15 corresponding to the positions of the printing medium in the conveying direction.

9. An ink jet printing apparatus according to claim 8, wherein the conveying means has at least a pair of rollers  
20 which are placed at a portion upstream of a recording position by the printing head in the conveying direction, and the control means controls said registration means so as to use a different adjusting value whether or not a trailing end of the printing medium depending on conveyed is in a  
25 position upstream of the pair of rollers or not.

10. A printing control method for an ink jet printing

apparatus comprising conveying means for conveying a printing medium along a conveying direction, scanning means for reciprocally moving a print head that ejects ink droplets along the main direction crossing the conveying direction, printing control means for controlling an operation performed by the print head to eject droplet while the printing head is reciprocally moved by said scanning means, said ink jet printing apparatus comprising:

a first adjusting step of adjusting ink ejecting timings in forward scanning and backward scanning of the printing head according to a first adjusting value when the printing medium is in a first position in the said conveying direction,

a second adjusting step of adjusting ink ejection timings in forward scanning and backward scanning of the printing head according to a second adjusting value different from the first adjusting value when the printing medium is in a second position downstream of the first position.

11. A printing control method for an ink jet printing apparatus according to claim 10, wherein the conveying means has a pair of rollers which are placed at a position upstream of a recording position by the print head in the conveying direction, and the first adjusting step is performed when a trailing end of the printing medium to be conveyed by the conveying means is in a position upstream of the pair of rollers, the second adjusting step is performed when



a trailing end of the printing medium is in the downstream of the pair of rollers.